

as the floating action of the pin with its three-point bearing equalizes all pressures, and at the same time provides a very secure method of clamping the work.

Chuck Jaws with Floating Locating Points. —The work *A*, shown in Fig. 9, is to be bored, shouldered and faced complete in one setting, and on account of its length it was considered necessary to provide additional supporting points besides the jaw surfaces. A set of special jaws *B* is keyed to the sub-jaws in the table at *D*, each special jaw being shouldered at *C* to support the work.

The brackets *E* are tongued at *F* to fit the special jaws and are secured thereto by the screws *G*. These brackets act as a

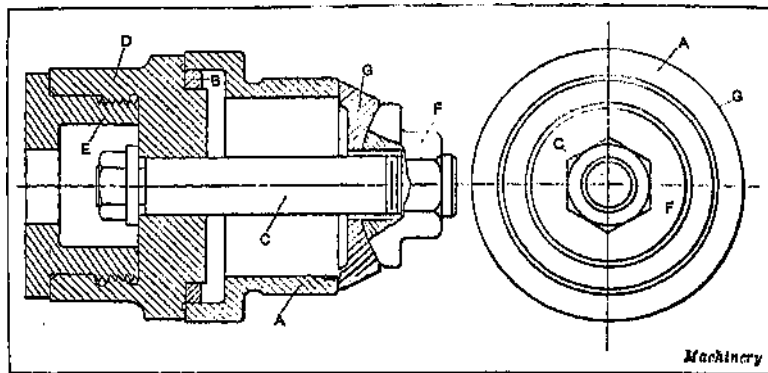


Fig. 10. Grinding Fixture for Steel Collars

support for the steel floating ring *M* in which the three spring-pins *I* are placed. Elongated holes at points *N* allow the required floating action, the ring being clamped by the collar-head screws. The brackets

on which the ring rests are provided with a shelf *II* which is offset slightly from the center so as to give the necessary width for the screws. In using the device, the screws *L* and *N* are loosened, and the work placed in the jaws, which are then tightened while the ring floats sufficiently to allow for variations. It will be noted that the pins, being spring-controlled, adapt themselves to the casting and are there locked by the screws *L*, after which the ring itself is clamped by the collar-head screws *N*.